

MARKARYAN, I.; DITYUK, A.

Practice in preparing and carrying out of the payment and receiving plan. Den. i kred. 18 no. 6:48-50 Ja '60.
(MIRA 13:6)

1. Upravlyayushchiy Idshevanskiy otdeleniyem Gosbanka ArmSSR (for Markaryan). 2. Benderskoye otdeleniye Gosbanka Moldavskoy SSR (for Dityuk).

(Idshevan--Banks and banking)

(Bendery--Banks and banking)

MARKARYAN, K., zootekhnik

~~More cows with high milk production. Nauka i pered. op. v sel'khoz.~~
8 no.8:22-25 Ag '58. (MIRA 11:10)

(Latvia--Dairying)

FEDORENKO, Nikolay Prokof'yevich, doktor ekonom. nauk, prof.;
NEKRASOV, N.N., retsenzent; MARKARYAN, Kh.A., inzh., re-
tsenzent; OSADA, P.A., red.; NOZGALEVSKAYA, S.A., mlad.
red.; GERASIMOVA, Ye.S., tekhn. red.

[Economics of the industry of synthetic products] Ekonomika
promyshlennosti sinteticheskikh materialov. Moskva, Izd-vo
ekon.lit-ry, 1961. 614 p. (MIRA 15:2)

1. Chlen-korrespondent AN SSSR (for Nekrasov).
(Synthetic products)

MARKARYAN, K.K., zootekhnik

Organize mechanized milking parlors. Nanka 1 pered. op. v
sel'khoz. no.10:44-45 O '56. (MLRA 9:12)

(Dairy barns) (Milking machines)

MARKARYAN, K.K.
ANDREYEVA, Ye.I.; MARKARYAN, K.K.

One hundred and seventy centners of meat and four hundred centners
of milk per hundred hectares. Nauka i pered.op.v sel'khoz. 7 no.7:
10-13 № '57. (MLRA 10:8)

1. Predsedatel' kolkhoza imeni kominterna (for Andreyeva)
(Stock and stockbreeding) (Dairying)

ACC NR: AP6018111

SOURCE CODE: UR/0298/65/018/009/0102/0106

AUTHOR: Avetisyan, G. A.; Novokreshchenova, N. S.; Yundin, Ye. V.; Markaryan, L. G.

ORG: Armenian Anti-Plague Station (Armyanskaya protivochumnaya stantsiya); All-Union Scientific Research Anti-Plague Institute "Mikrob" (Vsesoyuznyy nauchno-issledovatel'skiy protivochumnyy institut "Mikrob"); Stavropol' Branch, Institute "Mikrob" (Stavropol'skiy filial instituta "Mikrob")

TITLE: Experiments to study the feeding of fleas of the common vole in high-altitude conditions of Armenia with radioactive isotopes

SOURCE: AN ArmSSR. Izvestiya. Seriya biologicheskikh nauk, v. 19, no. 3, 1965, 102-106

TOPIC TAGS: entomology, epidemiology, fleas, vole, radioisotope, feeding

ABSTRACT: Voles were caught, radioactive sulfur was placed in their stomachs and they were released. From one to five days later, they and those within a radius of 10 meters from where they were released were caught again, and the number of labelled fleas was recorded. The index for feeding activity was taken to be the time required for a majority of the fleas in the colony to become labelled. The experiment was conducted in two habitats (altitudes: 2,300 and 1,750 meters) where epizootics of plague had occurred, and at the time of the experiment (July 1964) the predominant species of fleas were Ctenophthalmus wladimiri, Amphipsylla rossica, and Ceratophyllus consimilis. All three species showed high feeding activity, in that over half of the fleas became labelled in 24 hours. When the time of the experiment was

Card 1/2

L 39054-66

ACC NR: AP6018111

lengthened from one to five days, it was found that the number of nests containing labelled fleas increased from 35.3 to 58.2%, indicating the mobility of voles and fleas. In the summer season the difference in altitude between the two habitats had no effect. The ecological factors indicated by the experiment could facilitate the initiation and development of a plague epizootic in high-altitude conditions of Armenia.. Orig. art. has: 3 tables. [JPRS]

SUB CODE: 06, 18 / SUBM DATE: 14Aug64 / ORIG REF: 005

Card

2/2

MARKARYAN, L.P.; OGANISYAN, A.A.

Generalized motor reactions (movements) of the human fetus during
pregnancy complicated by malaria and some other diseases. Nauch.
trudy Inst.fiziol. AN Arm.SSR. 3:177-190 '50. (MIRA 9:8)
(FETUS) (PREGNANCY, COMPLICATIONS OF) (MALARIA)

GAMBARYAN, L.S.; MARKARYAN, L.P.; PARTEV, Z.Kh.

Possibility of the development of conditioned inhibition and switching in response to the same stimulus. Izv.AN Arm.SSR,Biol.i sel'khoz.nauki 7 no.2:73-79 '54. (MLRA 9:8)

1. Institut fiziologii Akademii nauk Armyanskoy SSR, Fiziologicheskaya laboratoriya Instituta akusherstva i ginekologii Ministerstva zdoravookhraneniya Armyanskoy SSR.
(CONDITIONED RESPONSE) (INHIBITION)

44574

S/739/60/001/000/011/015
E020/E185

2, 1220

AUTHORS: Markaryan, L.P., and Ordoyan, M.S.

TITLE: The effect of general X-irradiation on the genital system of white mice and rabbits (females)

SOURCE: Akademiya nauk Armyanskoy SSR. Sektor radiobiologii. Voprosy radiobiologii. v.1, 1960, 127-135

TEXT: Ten female mice in the second half of pregnancy and ten non-pregnant mice were subjected to X-irradiation in a dose of 418 r. Acute radiation sickness developed, and the manifestations and pathological findings are described at great length. In four pregnant mice which died 1 - 25 days after irradiation there were marked changes in the cardiovascular system (acute fatty degeneration of the myocardium with areas of necrosis and haemorrhage) and massive haemorrhages in the internal organs. There were haemorrhages in the uterine horns and ovaries, with necrosis of the corporea lutea and ovarian follicles. All the layers of the uterus were infiltrated with blood. In mice which died after 25 days the uterine cavity contained foetal remains in a state of petrification.

Card 1/2

The effect of general X-irradiation.. S/739/60/001/000/011/015
E020/E185

Fifteen pregnant rabbits were subjected to X-irradiation in a dose of 676 r. Acute radiation sickness developed, and leucopenia was noted in the offspring.

The results indicated that radiation sickness takes a more severe course in animals which are pregnant at the time of irradiation.

ASSOCIATION: Kafedra akusherstva i ginekologii i Kafedra patologicheskoy anatomii, Yerevanskogo meditsinskogo instituta
(Department of Obstetrics and Gynaecology, and Department of Pathological Anatomy, of the Yerevan Institute of Medicine)

X

Card 2/2

MARKARYAN, L.P.

Role of the cerebellum in the conditioned reflex activity of dogs.
Izv. AN Arm. SSR. Biol. nauki 13 no.6:97-102 Je '60. (MIRA 13:8)

1. Nauchno-issledovatel'skiy institut akusherstva i : nekologii
Minzdrava Armyankoy SSR.
(CEREBELLUM) (CONDITIONED RESPONSE)

MARKARYAN, L.P.

Role of the cerebellum in the sexual function of dogs (bitches).
Izv. AN Arm. SSR. Biol. nauki 14 no.6:73-79 '61. (MIRA 14:80)

1. Kafedra akusherstva i ginekologii Yerevanskogo meditsinskogo instituta
i fiziologicheskaya laboratoriya Nauchno-issledovatel'skogo instituta
akusherstva i ginekologii.
(CEREBELLUM) (SEX (BIOLOGY))
(DOGS---PHYSIOLOGY)

MARKARYAN, L.P.; TERDZHANYAN, E.Ye.

Evaluating the role of cerebellum in the higher nervous activity of dogs. Izv. AN Arm. SSR. Biol. nauki 14 no.11:65-71 N '61.
(MIRA 15:3)

1. Kafedra akusherstva i ginekologii Yerevanskogo meditsinskogo instituta, Fiziologicheskaya laboratoriya Nauchno-issledovatel'skogo instituta akusherstva i ginekologii i Fiziologicheskaya gruppa sektora radiobiologii AN Armyanskoy SSR.

(CEREBELLUM)
(NERVOUS SYSTEM)

MARKARYAN, L.P.

Effect of the complete removal of cerebellum on the development of sexual functions and reproductive activity in female dogs.
Izv. AN Arm. SSR. Biol. nauki 14 no.12:105-110 D '61. (MIRA 15:3)

1. Kafedra akusherstva i ginekologii Yerevanskogo meditsinskogo instituta i fiziologicheskaya laboratoriya Nauchno-issledovatel'skogo instituta akusherstva i ginekologii.

(CEREBELLUM)

(GENERATIVE ORGANS, FEMALE)

MARKARYAN, L.P.

Effect of partial destruction of the cerebellum on the development
of the sexual function in dogs (bitches). Dokl. AN Arm. SSR 32
no.5:255-258 '61. (MIRA 14:9)

1. Yerevanskiy meditsinskiy institut i Nauchno-issledovatel'skiy
institut akusherstva i ginekologii Armyanskoy SSR.
(CEREBELLUM) (SEX (BIOLOGY)) (DOGS--PHYSIOLOGY)

GAMBARYAN, L.S.; MARKARYAN, L.P.

Role of the cerebellum in the sexual function of female dogs. *Physiol. bohemoslov.* 12 no.1:76-80 '63.

1. Laboratory of Physiology, Section of Radiobiology, Armenian Academy of Sciences and Laboratory of Physiology, Institute of Obstetrics and Gynaecology, Yerevan, Armenian SSR.

(CEREBELLAR CORTEX) (SEX BEHAVIOR) (REFLEX CONDITIONED)

MARKARYAN, L.F.; GRIGORYAN, G.S.

Role of cerebellum in the sexual function in sheep. Izv. AN
Arm. SSR. Biol. nauki 16 no.4:43-46 1969.

1. Fiziologicheskaya laboratoriya Instituta akusherstva i
ginekologii Ministerstva zdoroookhraneniya SSSR, katedra
akusherstva i ginekologii Yerevanskogo gosudarstvennogo
instituta i katedra akusherstva i ginekologii Yerevanskogo
veterinarnogo instituta.

GAMBARJAN, L.S.; MARKARJAN, L.P.

Role of the cerebellum in the mechanisms of maturation of sexual function and reproductive activity. Cesk. gynek. 28 no.7:429-432 S '63.

1. Fyziologicka laborator Vyzkumneho ustavu porodnictvi a gynekologie ministerstva zdravotnictvi Armenske SSR a Fyziologicka laborator oddeleni radiobiologie AV Armenske SSR - Jerevan.

(CEREBELLUM) (SEX BEHAVIOR) (REPRODUCTION)
(ESTRUS) (PHYSIOLOGY)

GAMBARYAN, L.S.; MARKARYAN, L.P.

Role of cerebellum in the maturation mechanisms of sexual function
and of reproductive activity. Fiziol. zhur. 49 no.12:1489-1493
D '63. (MIRA 17:12)

1. Otdel biofiziki i bioniki Instituta fiziologii im. L.A. Orbeli
AN Arm. SSR i Fiziologicheskaya laboratoriya Nauchno-issledovatel'-
skogo instituta akusherstva i ginekologii Ministerstva zdravookhra-
neniya Armyanskoy SSR, Yerevan.

MARKARYAN, M., insh.

Kilning gypsum in rotary drum dryers. Stro1. mat. 4 no.11:27-28
'58. (MIRA 11:12)
(Gypsum) (Kilns, Rotary)

MARKAR'YAN, M. A.

DECEASED

1964

Railroads

track

Ties

C. 62

NATADSE, G.M., professor [author]; GALANIN, N.F.; MARKARYAN, M.G.; OSIPOV, Yu.A.
[reviewers].

"Principles of hygiene" G.M.Natadse. Reviewed by N.F.Galanin, M.G.Markarian,
Yu.A.Osipov. Gig.i san. no.8:57-61 Ag '53. (MLRA 6:9)
(Hygiene) (Natadse, G.M.)

MAHKARYAN, M.K.; RYZHOV, N.V.; STANNIKOV, I.V.

Decontamination of water infected with botulin toxin. J.hyg.epidem.
Praha 4 no.4:385-389 '60.

1. Akademi S.M.Kirov, Leningrad.
(WATER POLLUTION prev. & control)
(CLOSTRIDIUM BOTULINUM pharmacol)

CA

MARKARYAN, M.K.

14

The role of organic compounds in chlorination of water
M. K. Markaryan. *Tr. Vsesoyuzn. Nauch. Konf. 1982, No. 4, 12-16.*
The bactericidal effect of Cl_2 in water greatly depends on
pH, lower pH levels lead to greater concn. of active HOCl .
Since Cl_2 lowers the pH of water it is better for treating drink-
ing water than is chlorinated lime which raises pH. Cl_2
treatment does not affect carbohydrates, hippuric acid, and
sulf. fatty acids in aq. soln., but it does affect nitrogenous
compds. in various ways. Urea forms N -chloro derivatives that
possess bactericidal activity of their own, especially in acidic
solns. Amino acids behave similarly to urea derivs. and
creatinine
G. M. Kosolapov

1. MARKARYAN, M. K.
2. USSR (600)
4. Water - Pollution
7. Comparative characteristics of water of closed swimming pools. Gig. i san. Vol. 17 no. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953, Unclassified.

MARKARYAN, M.K. (PROF.)

✓ Preparation of drinking water from highly mineralized waters of Central Asia with the aid of some native ion-exchange resins. M. K. Markaryan and E. V. Shtannikov (S. M. Kirov Military Med. Acad., Moscow). *Gigiena i Sanit.* 1953, No. 9, 8-11. — Filtration of typical Central Asiatic waters through Soviet-made ion-exchange resins (Espatite-1 or -TM, EDB-10, and AN-21) indicates that the

cation-exchanger Espatite-1 and anion-exchanger EDB-10 can be used for successful demineralization of waters contg. 5-11 g./l. of mineral salts. Espatite-TM and AN-21 are ineffective. G. M. Korolapoff

MARKARYAN, M.K., polkovnik meditsinskoy sluzhby, professor

Pollution of water sources by radioactive matter and hygienic
problems of the water supply. Voen.-med.zhur. no.10:43-49 0 '55.

(WATER--POLLUTION)

(MIRA 9:10)

(RADIOACTIVITY--PHYSIOLOGICAL EFFECT)

MARKARYAN, M.K.; SHTANNIKOV, Ye.V.

New methods for the distillation of salt water. Izv. AN Turk. SSR
no. 3:44-50 '56. (MLRA 9:12)

1. Voenno-meditsinskaya akademiya imeni S.M. Kirova.
(Distillation)

MARKARYAN, M.K., polkovnik meditsinskoy sluzhby, prof.; RYZHOV, N.V.,
polkovnik meditsinskoy sluzhby, dotsent; SHTANNIKOV, Ye.V., mayor
meditsinskoy sluzhby, kand.med.nauk

Mechanism of the detoxifying action of the preparation. Voen.-med.
zhur. no.5:83-84 My '61. (MIRA 14:8)

(VIRUSES)

MARKARYAN, M.M.

Use of a magnetic probe. Veterinariia 41 no.11:103-104
N '64. (MIRA 18:11)

1. Zaveduyushchiy Suvorovskim veterinarnym uchastkom
Stavropol'skogo kraya.

MNDZHOYAN, A.L., red.; AKOPYAN, N.Ye., red.; AFRIKYAN, V.G., red.;
MARKARYAN, M.O., red.; MIRZOYAN, S.A., red.; MIDZHOYAN,
A.L., red.; RYSS, S.M., red.

[Arpenal and the results of its clinical use] Arpenal i opyt
ego klinicheskogo primeneniia. Erevan, Izd-vo AN Armianskoi
AAR, 1964. 387 p. (MIRA 17:11)

1. Akademiya nauk Armyanskoy SSR, Erivan. Institut tonkoy
organicheskoy khimii.

GORYAYNOV, K.E.; MARKARYAN, M.S.; AKSENOV, P.A.

Electric welding of refractories. Stek. 1 ker. 22 no. 2:33-35
F '65. (MIRA 18x3)

1. MARKARYAN, M. V.
 2. USSR (600)
 4. Wine and Wine Making
 7. Factory needs help. Vin. SSSR 13, No. 4, 1953.
9. Monthly List of Russian Accessions, Library of Congress, April 1953. Unclassified.

KAZUMOV, N.; ^{V.}MARKARYAN, M.; KAZYUMYAN, Z.

Role of solid particles of grapes in the technology of strong
wines. Prom.Arm. 4 no.10:38-39 0 '61. (MIRA 14:11)
(Armenia--Wine and wine making)

KAZUMOV, N.; MAHKARYAN, M.^V; KAZUMYAN, Z.

Solid particles of wine grape as a factor predetermining the quality
of invigorated wine of the "Port Wine" tupe. Prom.Arm. 5 no.6:52-54
Je '62. (MIRA 15:7)

(Armenia—Wine and wine making)

USSR/Chemistry - Analytical

1 Sep 52

"Hydrazides of Phthalic Acid Substituents - Chemiluminescent Indicators," A. A. Ponomarenko, N. A. Markar'yan, A. I. Komlev, L'vov State University. Franko

"Dok Ak Nauk SSSR" Vol 86, No 1, pp 115, 116

Proposes a new type of indicator for use in acid-base titration where the color of the soln prevents the use of ordinary indicators. 3-Aminophthalic acid hydrazide (luminol) was used for the titration of 0.1 N H_2SO_4 with 0.1 N NaOH. The titration was carried

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out in the dark and the end point noted when the luminescence ceased. Luminescence would start at pH 8.0-8.5. An alternative method of enclosing the soln in a dark box and titrating with the aid of selenium photoelectric cell and a galvanometer was found to be preferable to electrometric or conductometric methods. Presented by Acad I. I. Chernyayev 28 Jun 52.

MARKAR'YAN, N. A.

234721

MARKAR'YAN, N. A.

USSR.

Chemiluminescence of hydrazides of substituted phthalic acids. A. A. Ponomarenko, N. A. Markar'yan, and A. I. Kamlev (Lv. Franko State Univ., Lvov). *Doklady Akad. Nauk S.S.S.R.* 89, 1061-3(1953); cf. C.A. 47, 1633g. The effect was detd. of concn. of indicator (0.003-0.230%), activator ($K_2Fe(CN)_6$, 0-20%), and oxidant (H_2O_2 , 0.1-3.0%) upon the intensity of the luminescence (I) of luminol in aq. soln.; optimum concns. were found to be 0.06, 2.5, and 0.3%, resp. The effect of temp. (0-80°) on such a mixt. was detd.; the max. intensity was at 20°, though the most persistent I was at 0°. Following are the pH of incipient I and the relative intensities of I in several phthalhydrazides, under these optimum conditions: 3-amino-, 8.0-8.5, 100; 4-amino-, 7.7-7.8, 4.5; 3-nitro-, 8.4-8.5, 13.0; 4-nitro-, 8.4-8.5, 1.3; 3-chloro-, 8.8-9.2, 0.222; 4-chloro-, —, 0.084; 4,5-dichloro-, 8.5-8.7, 0.202; and tetrachlorophthalhydrazide, 9.0, 0.633%. From this comparison the effect of position and substituent can be seen. Data on Cl compds. was obtained by photographic photometry; on the others, with a colorimeter. Malcolm Anderson

MAMEDOVA, V.M.; MARKARYAN, N.S.

Spectrophotometric method for determining benzene traces in
straight-run hydrogenated gasoline. Nefteper. i neftekhim.
no.10:14-16 '63. (MIRA 17:2)

MARKAR'YAN, O.I.; SERGEYEV, S.Ya.

Recovery from salvarsan encephalitis. Vest.ven.1.derm.no.3:
56-57 My-Je '55. (MLRA 8:10)

1. Iz Semipalatinskogo oblastnogo kozhno-venerologicheskogo
dispansera
(SYPHILIS) (SALVARSAN) (ENCEPHALITIS)

SIDOROV, S.M., prof.; MARKAR'YAN, O.I.

Case of closed traumatic rupture of the heart. Sud.-med. ekspert.
4 no.4:54 O-N-D '61. (MIRA 14:12)

1. Byuro Glavnoy sudebnomeditsinskoj ekspertizy (nachal'nik - prof.
S.M. Sidorov) Ministerstva zdravookhraneniya Kazakhskoy SSR.
(HEART.....RUPTURE)

MARKAR'YAN, O.I.

Fatal outcome from a therapeutic dose of osarsol. Zdrav. Kazakh.
21 no.1:83-84 '61. (MIRA 14:3)

1. Iz Glavnoy sudebno-meditsinskoy ekspertizy Ministerstva zdravookh-
raneniya Kazakhskoy SSR.
(ACETARSONE—TOXICOLOGY)

MARKARYAN, O.

12089

ARMENIA/City Planning 6802.0318 Oct 1947

"Architecture of Soviet Armenia," O. Markaryan, 5 pp

"Arkh i Stroi" Vol II, No 12

Most significant monuments, public buildings, parks and other structures including architects are mentioned. Pictures of central part of the State House, the iron fence of the Theater of Opera and Ballet, front view of the theater, and a general view of the city of Yerevan from Kanakirak Street. A photograph of the aqueduct built in 1946 across the Zanga River included.

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12089

MARKAR'YAN, P. A.

"Mineral Metabolism and Capillaroscopic Phenomena in Pregnant
and Parturient Women Suffering From Malaria." Sub 8 Jan 52,
Central Inst for the Advanced Training of Physicians.

Dissertations presented for science and engineering degrees
in Moscow during 1951.

SO: Sum. No. 480, 9 May 55

Dr. P. A. Markaryan

MARKARYAN, P.A.; GAMBARYAN, L.S.

Visceromotor reflexes. Izv.AN Arm.SSR.Biol.i sel'khoz.nauki 7 no.11:
87-92 N '54. (MLBA 9:8)

1. Nauchno-issledovatel'skiy institut akusherstva i ginekologii
Ministerstva zdoravookhraneniya Armyanskoy SSR.
(REFLEXES)

MARKARYAN, P.A.; GAMBARYAN, L.S.; KAZAROV, A.P.; KARAGHYAN, K.G.

Effect of reflexes from the interoceptors on phagocytosis, blood clotting, the quantity of leucocytes and thrombocytes. Dokl. AN Arm. SSR 20 no.4: 155-159 '55. (MIRA 8:7)

1. Nauchno-issledovatel'skiy institut akusherstva i ginekologii Ministerstva Zdravookhraneniya Arмянskoy SSR. Predstavleno L.A. Oganesyanom. (Receptors (Neurology)) (Blood)

MARKARYAN P.A.
EXCERPTA MEDICA Sec.2 Vol.9/10 Physiology, etc. Oct56

4730. MARKARYAN P.A., GAMBARYAN L.S., KAZAROV A.P. and KARAGE-
ZYAN K.G. Physiol. Lab. of Res. Inst. of Obstet. and Gynecol., Min. of
Hlth Protect., Armen.SSSR, Erevan. *Reflex effects from intero-
ceptors on phagocytosis, clotting time and leucocyte and
thrombocyte count in blood (Russian text) FIZIOL. Z. 1956,
42/4 (382-389) Tables 3 illus. 4

Mechanical or electrical stimulation of the jejunum, uterus or skin in 4 dogs in-
creased the phagocytic index of leucocytes and the number of leucocytes and throm-
bocytes, and shortened the clotting time. Similar changes were observed in wo-
men during abortion. Conditioned sound reflexes could be obtained in dogs on this
basis, the changes being similar to those with unconditioned stimuli.

Simonson - Minneapolis, Minn.

MARKARYAN, P.A.; GAMBARYAN, I.S.

Characteristics of the restoration of functions in ontogenesis following injuries of the spinal cord. Izv. AN Arm.SSR. Biol. i sel'khoz.nauki 10 no.8:31-36 Ag '57. (MIRA 10:10)

1. Fiziologicheskaya laboratoriya Nauchno-issledovatel'skogo instituta okusherstva i ginekologii Ministerstva sdraveokhraneniya Arayanskoy SSR.

(SPINAL CORD)

MARKARYAN, P.A.; GAMBARYAN, L.S.; ORIGORYAN, G.Ye.

~~Materials~~ on the study of compensatory adaptations in animals.
Izv. AN Arm.SSR. Biol. i sel'khoz.nauki 11 no.8:47-52 Ag '58.
(MIRA 11:10)

1. Fiziologicheskaya laboratoriya Nauchno-issledovatel'skogo
instituta akusherstva i ginekologii Minsdrava ArmSSR.
(ANIMAL LOCOMOTION)

GAYSIN, B.M.; GROZOV, D.P.; MARKARYAN, R.L.

New refractory mixture for the lining of electric arc furnace
walls. Lit. proizv. no.6:39 Je '63. (MIRA 16:7)

(Refractory materials)

GAYSIN, B.M.; MARKARYAN, R.L.

Refractory mixture for lining the lower half of steel pouring
ladles. Lit. proizv. no.3:37 Mr '64. (MIRA 18:9)

MARKARYAN, R.N.

Fecundity and sex of the offspring as related to the management
of herd rams. Izv. AN Arm. SSR. Biol. nauki 18 no.11:112-115
N '65. (MIRA 19:1)

1. Kafedra akusherstva Yerevanskogo zooveterinarnogo instituta.
Submitted June 1, 1964.

MARKARYAN, R.P., inzh.; GAYSIN, B.M., inzh.

Increasing the resistance of steel-pouring ladle lining.
Mashinostroenie no. 2:37 Mr-Ap '64. (MIRA 17:5)

CHUNTYZHEV, Kh.O.; PRONIN, S.V.; LISOVSKIY, Yu.P.; MARTYNOV, V.D.;
MARKARYAN, S.B.; FARIZOV, I.O.; ALEKSANDROVSKAYA, L.I.;
~~USOV, G.A.~~; ~~EDUR~~, M.; YURLOV, P.F.; AFANAS'YEV, L.A.,
otv. red.; GARSIA, L., red.; DARONYAN, M., mladshiy red.;
NOGINA, N., tekhn. red.

[Agricultural cooperation under the conditions of capitalism]
Sel'skokhoziaistvennaia kooperatsiia v usloviakh kapitaliz-
ma. Moskva, Sotsekgiz, 1963. 350 p. (MIRA 16:9)

1. Akademiya nauk SSSR. Institut mirovoy ekonomiki i mezhdunarodnykh otnosheniy.
(Agriculture, Cooperative) (Capitalism)

MARKARYAN, S.M., inzh.

Investigating the relation of the physico-mechanical properties of
stabilized sand to the degree of the filling of pores. Shakht. stroi.
9 no.2:11-13 F '65. (MIRA 18:4)

1. Institut gornogo dela imeni A.A.Skochinskogo.

SAFONOV, V.A.; INDYUKOV, N.M.; SHEVTSOV, I.S.; ~~MARKHANYAN, S.M.~~ HUSTAMOV, M.I.

Adoption of a process for the thermal treatment of Kirmaki oil-bearing sands in a "fluidized" bed. Sbor.trud.AzNI NP no.2:
288-307 Ag 58. (MIRA 12:6)

(Apsheiron Peninsula--Oil sands)
(Fluidization)

MARKARYAN, S.S.; YUGANOV, Ye.M.

Aural obturator. Vest. oterinolar., Moskva 15 no.2:82 Mar-Apr 1953.
(CIML 24:3)

1. Moscow.

MARKARYAN, S.S.

Human Physiology

Dissertation: "The Effect of Different Types of Breathing on Some Functions of the Human Organism Under Conditions of Lowered Barometric Pressure Corresponding to an Elevation of 5,000 Meters." Cand Med Sci, Second Moscow Medical Inst imeni I.V. Stalin, 8 Mar 54. (Meditsinskiy Rabotnik, Moscow, 2 Mar 54).

SO: SUM 213, 20 Sep 54

MARKARYAN, S.S., mayor meditsinskoy sluzhby, kandidat meditsinskikh nauk

Effect of a prolonged stay at high elevations on the otorhinolaryn-
gological organs in man. Voer.-med. zhur. no.3:34-36 Mr '56.

(ALTITUDE, INFLUENCE OF)
(OTORHINOLARYNGOLOGY)

(MIRA 9:9)

MARKARYAN, S.S., kand.med.nauk

Relation between vegetative reactions and the persistence of
illusions of counterrotation following stimulation of the vestibular
apparatus. Voen.-med.zhur. no.7:81 J1 '57. (MIRA 11:1)
(EQUILIBRIUM (PHYSIOLOGY))

1(2)
27(2)

SOV/177-58-1-18/25

AUTHORS: Borshchevskiy, I.Ya., Colonel of the Medical Corps, Candidate of Medical Sciences; Koreshkov, A.A., Colonel of the Medical Corps, Candidate of Medical Sciences; Markaryan, S.S., Major of the Medical Corps, Candidate of Medical Sciences; Preobrazhenskiy, V.V., Lieutenant-Colonel of the Medical Corps, Candidate of Medical Sciences; Terent'yev, V.G., Lieutenant-Colonel of the Medical Corps

TITLE: The Effect of the Vibrations of Certain Modern Helicopter and Aircraft Types on the Human Body (Vliyan-
iye na organizm cheloveka vibratsiy nekotorykh tipov
sovremennykh vertoletov i samoletov)

PERIODICAL: Voenno-meditsinskiy zhurnal, Nr 1, 1958, pp 74 - 77
(USSR)

ABSTRACT: The author reports on his examinations of persons
tested by a type VP-70 vibration stand (Figure 1)
which produces a single-component vertical vibration.

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SOV/177-58-1-18/25

The Effect of the Vibrations of Certain Modern Helicopter and Aircraft Types on the Human Body

By a special adjustment, vibrations reached a frequency of 10 to 70 hz and an amplitude of 0.2 - 2.5 mm. Four series of 3 tests each were performed. During the first two tests of each series, the person to be tested was subjected only to vibration and during the third test simultaneously to vibration and to a 105 to 110-decibel noise. Between tests there were intervals of 3 - 7 days. The data obtained have proved that vibrations with low frequencies and large amplitudes may disturb the pilot's visual orientation during flight and also negatively influence his ability to hit the target. The reactivity of the vestibular analyzer had noticeably increased. Hearing was impaired only by simultaneous vibration and noise effects. Vibrations with frequencies of 40 and 70 hz and amplitudes of 0.8 and 0.4 mm over periods of 4 and

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SOV/177-58-1-18/25

The Effect of the Vibrations of Certain Modern Helicopter and Aircraft Types on the Human Body

8 hours, caused insignificant functional changes in the human organism. Vibrations with a frequency of 10 hz and an amplitude of 1.8 and 2.4 mm result in pronounced and permanent functional changes and cannot be recommended as physiologically permissible for the cockpits of helicopters and other aircraft. There is 1 photograph.

Card 3/3

МАРКАРЯН С.С.

MARKARYAN, S.S., kand.med.nauk (Moskva)

Continuous registration of physiological functions of the body during stimulation of the vestibular analyzer with the aid of an electrically vibrated chair. Vest.oto-rin. 20 no.1:103-105 Ja-F '58.(MIRA 11:3)
(VESTIBULAR APPARATUS, physiol.
stimulation of analyzer, determ. of physiol. funct.
of organism with aid of electrically vibrated chair (Rus)

MARKARYAN, S.S., kand.med.nauk

Training of tactile-vibratory sensitivity in man [with summary in English]. Vest.oto.-rin. 20 no.4:11-13 J1-Ag'58 (MIRA 11:7)

1. Iz otolaringologicheskogo otdeleniya (sav. - dots. F.F. Malomukh) datskoy bol'nitsy imeni F.E. Dzerzhinskogo, Moskva.

(HEARING DISORDERS, ther.

train. of tactile-vibratory sensitivity in deafness (Rus))

(VIBRATIONS,

same (Rus))

(TOUCH,

same (Rus))

MARKARYAN, S.S. kand. med. nauk, mayor meditsinskoy sluzhby

Effect of vibrations on the otorhinolaryngological organs. Voen.
med. zhur. no.4:70-74 Ap '59. (MIRA 12:8)

(VIBRATIONS, eff.

on otorhinolaryngol. organs (Rus))

(OTORHINOIARYNGOLOGY,

eff. of vibration on otorhinolaryngol. organs (Rus))

MARKARYAN, S.S., kand.med.nauk (Moskva)

Dependence of the postrotatory nystagmus reaction on the excitability of the vestibular analyzer. Zhur.ush., nos.1 gorl.bol. 21
no.6:37-42 N-D '61. (MIRA 15:11)
(NYSTAGMUS) (VESTIBULAR APPARATUS)

ACCESSION NR: AT4042702

S/0000/63/000/000/0357/0360

AUTHOR: Margaryan, S. S.

TITLE: Vestibular reaction during the action of angular accelerations of various magnitudes

SOURCE: Konferentsiya po aviatsionnoy i kosmicheskoy meditsine, 1963. Aviatsonnaya i kosmicheskaya medicina (Aviation and space medicine); materialy konferentsii. Moscow, 1963, 357-360

TOPIC TAGS: acceleration effect, angular acceleration, vestibular reaction, nystagmus, man

ABSTRACT: The effects of angular accelerations were tested on 13 healthy persons at various angles of inclination of the body from the vertical sitting position ranging from 0 to 60°. Subjects were exposed to angular accelerations of 30, 40, 60, and 120°/sec². The results of the experiment indicated that nystagmus reaction during effects of angular accelerations on man depends on the position of the body in respect to the vertical axis of rotation. As the
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ACCESSION NR: AT4042702

angle of inclination of the body is increased (from 0 to 90°) the nystagmus is gradually diminished. However, the sensory illusion of counter rotation persists. For 30 or more seconds during the period of appearance of the nystagmus it becomes impossible to read the aviation instrument panel and to determine figures on a special table. After being subjected to angular accelerations, the majority of subjects suffered from a greater or lesser loss of a sense of balance. It was found that when persons who are sensitive to vestibular changes turned their head during rotation, vegetative reactions appeared (blanching, sweating, and vomiting). Being repeatedly subjected to the action of angular accelerations can be recommended for the purpose of training the vestibular analyzer in flying personnel.

ASSOCIATION: none

SUBMITTED: 27Sep63

ENCL: 00

SUB CODE: LS

NO REF SOV: 000

OTHER: 000

Card 2/2

ACCESSION NR: AT4042720

S/0000/63/000/000/0504/0507

AUTHOR: Yuganov, Ye. M.; Markaryan, S. S.; Bryanov, I. I.; Sidel'nikov, I. A.; Vartbaronov, R. A.

TITLE: Methods of vestibular testing

SOURCE: Konferentsiya po aviatsionnoy i kosmicheskoy meditsine, 1963. Aviatsionnaya i kosmicheskaya meditsina (Aviation and space medicine); materialy konferentsii. Moscow, 1963, 504-507

TOPIC TAGS: Coriolis acceleration, vestibular analyzer, angular acceleration, linear acceleration, disorientation, spatial orientation, vestibular mechanism, vegetative reaction/Darani chair

ABSTRACT: The angular, Coriolis, and linear accelerations to which aircraft pilots and cosmonauts are subjected effect the vestibular analyzer. This gives rise to two types of vestibular reactions. The first is an illusory one, which can lead to disorientation in space, and the second can cause vestibular-vegetative reactions which bring about a deterioration of general well-being. This

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ACCESSION NR: AT4042720

means that methods of vestibular selection must be sufficiently reliable to be able to predict the appearance of these vestibular reactions in flight. The selection methods developed by us are based on the interaction of reflexes between afferent systems. The method of determining the threshold of sensitivity of the vestibular mechanism to the illusion of banking is performed on a special chair with unstable supports. The subject sits on this chair with his eyes closed while one of his vestibular mechanisms is stimulated by a 10-cps current for periods of 3 and 10 sec. If the subject fails to incline his body, the current is gradually increased (but not to exceed 3 mamp) until the desired inclination of the body in the direction opposite to the stimulated labyrinth is obtained. A second type of experiment is performed under similar conditions but with the eyes open and fixed on a small lighted bulb placed 60 cm away along the center line on the level of the eyes. The amount of current required to induce a sensation of banking in the direction of the stimulated labyrinth is measured. The difference between the amount of current required to produce this with the eyes closed and the amount required to produce the same sensation with the eyes open represents the magnitude of the inhibiting effect of the visual analyzer on the vestibular analyzer. The degree of motor reaction which accompanies the illusion is recorded on an oscil-

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ACCESSION NR: AT4042720

lograph. Sensitivity to illusions of inclination is characterized by the amount of the current during the combined action of the stimulator for a 10-sec period. On the average it varies between 1.5 and 2.5 mamp. A current of less than 1.5 mamp indicates an increased sensitivity to illusions of banking in flight. In order to test the ability of the motor analyzer to exert an inhibiting effect on vestibular reactions, the subject, with his eyes closed, is rotated clockwise (10 turns in 20 sec), and three minutes later he is rotated for a similar period counter-clockwise. After each period of rotation, the chair is brought into an unstable position. Persons who are likely to lose their sense of orientation in flight experience a pronounced sensation of counter-rotation, lose their sense of balance for a period of thirty or more seconds, accompanied by complete spatial disorientation and the appearance of vestibular reactions for 10 to 15 sec. This method of evaluation of the tendency of pilots to lose their sense of spatial orientation has proved to be 80% effective, as compared with older methods which were only 25% effective. The degree to which vegetative reactions appear, due to the effects of intermittent Coriolis accelerations on the vestibular analyzer, is determined by tests on a Barani chair, which is rotated at the rate of 180° per sec for a period of 20 sec while the subject, with eyes closed, bends his head rhythmically to one side at the rate of 16 times per 20 sec. At the moment the chair stops

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ACCESSION NR: AT4042720

the subject is requested to hold his head straight and to open his eyes. The subject is examined for signs of vegetative reactions (paleness, sweatiness, vomiting). If these signs are absent, a similar test is performed with rotation in the opposite direction. If signs of vegetative reactions do not appear, experiments are continued with variations. The subject is asked to bend his trunk forward 8 times in a 20-sec period instead of moving the head sidewise. The interval between rotations should not exceed one minute. If at any stage of this procedure paleness, sweatiness, or nausea appears, the subject should be considered unfit for flight school. A second test of tolerance to Coriolis accelerations is performed with the subject seated on a Barani chair which is rotated at the rate of 180° per sec while the subject moves his head forward and back through an arc of 35° . The time of onset of vegetative disorders is recorded. Persons with stable vestibular analyzers require 4 to 6 minutes before vegetative disorders appear. In persons with unstable vestibular analyzers, who are unfit for flight training, these symptoms arise after one or two minutes. A third method of testing tolerance to cumulative Coriolis accelerations is the so-called two-minute test. The subject, with eyes closed, is rotated on a Barani chair at the rate of 180° per sec for one minute. During this time he inclines his trunk forward and back every 5 sec on command. After 50 sec the experiment is performed with rotation in the opposite

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. ACCESSION NR: AT4042720

direction. Signs of vegetative reactions and subjective sensations are recorded. This test, performed on 200 subjects, has indicated that persons who can withstand the two-minute Coriolis test can withstand other forms of acceleration tolerance tests. It was found that these three methods of testing stability to Coriolis accelerations are capable of revealing hidden forms of vestibular-vegetative disruptions which cannot be determined by the standard tests.

ASSOCIATION: none

SUBMITTED: 27Sep63

ENCL: 00

SUB CODE:LS

NO REF SOV: 000

OTHER: 000

Card 5/5

ACCESSION NR: AT4042691

S/0000/63/000/000/0261/0265

AUTHOR: Kogan, R. Ye.; Markaryan, S. S.

TITLE: Morphological changes arising in the labyrinths of dogs under the influence of radial accelerations

SOURCE: Konferentsiya po aviatsionnoy i kosmicheskoy meditsine, 1963. Aviatsionnaya i kosmicheskaya meditsina (Aviation and space medicine); materialy konferentsii. Moscow, 1963, 261-265

TOPIC TAGS: acceleration stress, acceleration effect, labyrinth, morphological change, dog, longitudinal acceleration, middle ear

ABSTRACT: Three groups of experiments were performed in order to determine what morphological changes are caused in the labyrinths of dogs by longitudinal acceleration stress. In the first series, dogs were subjected to acceleration stress of 6--14 g from 8 to 18 min with the axis of rotation passing through the head. In a second group of experiments, dogs were subjected to acceleration stress of 10--13.5 g lasting from 7 to 17 min with the axis of rotation passing through the heart. In the third group, dogs were exposed to accelerations of 2.3--5.7 g for ✓

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ACCESSION NR: AT4042691

16 to 17 min with the axis of rotation passing through the pelvis. When the action of acceleration was in the head-pelvis or pelvis-head direction (groups I and III), the average magnitudes and durations of acceleration to which they were subjected produced hemorrhages in the middle and inner ears of the animals. In the inner ear, hemorrhages arise in the perilymphatic spaces of the cochlea and the sacculus. Dogs which perished during experiments with the axis of rotation passing through the heart did not show any hemorrhages in the middle or inner ears.

ASSOCIATION: none

SUBMITTED: 27Sep63

ENCL: 00

SUB CODE: LS

NO REF SOV: 000

OTHER: 000

Card 2/2

MARKARYAN, S.S., kand.med. nauk (Moskva)

Effect of light stimuli on the distinctiveness of some
vestibular reactions in man. Zhur. ush., nos. 1 gorl. bol.
23 no.4:41-45 J1-Ag'63. (MIRA 16:10)
(LIGHT — PHYSIOLOGICAL EFFECT) (LABYRINTH (EAR))

L 13319-66 EWT(1)/FS(v)-3 SCTB ID

ACC NR: AP6003453

SOURCE CODE: UR/0216/66/000/001/0029/0036

AUTHOR: Markaryan, S. S.

ORG: none

TITLE: Vestibular reactions of deaf people to the influence of angular and Coriolis accelerations

SOURCE: AM SSSR. Izvestiya. Seriya biologicheskaya, no. 1, 1966, 29-36

TOPIC TAGS: acceleration effect, ~~deafness~~, vestibular function, vestibular analyzer, Coriolis ~~acceleration~~, angular acceleration, ~~nystagmus~~ ^{audition}

ABSTRACT: In the absence of comprehensive data on the subject, a study of vestibular function in deaf-mutes was undertaken, noting their reactions to the influence of angular, radial, and Coriolis accelerations. The subjects were 42 deaf-mutes aged 18-23. Standard tests showed that 12 of the group had acutely impaired vestibular function, as determined by the absence of postrotational nystagmus or an illusion of counterrotation, and by a positive reaction to the Romberg test. Nine of the 12 subjects with nonfunctional vestibular analyzers were then subjected to angular and Coriolis accelerations of varying magnitude. A series of tests to determine the cumulative effect of Coriolis accelerations of 180 deg/sec for 20 min (with the subjects' heads periodically inclined forward or to the side with eyes closed) had the following result: the deaf-mute subjects experienced no motion sickness (no dizziness, shiv-

Card 1/2

UDC: 611.85:629.195.2

L 13319-66

ACC NR: AP6003453

ering, or nausea). Pulse and respiration rates of the subjects did increase during this test, but this can be attributed to physical factors during head movements since similar shifts were also observed in control subjects. Another group of tests, with Coriolis accelerations of 180 and 360°/sec (with subjects' heads inclined forward or to the side with eyes open) produced no vertigo in the subjects, no counterrotation illusions, and no false illusions of instrument positions. The last group of tests involved radial accelerations of 180°/sec in a head-to-foot or foot-to-head direction. The appearance of upside-down illusions in this test variant can be attributed to stimulation of other afferent systems. Thus it was shown that deaf-mutes with non-functional vestibular systems do not react to angular and Coriolis accelerations. This indicates affliction of both the ampullar and otolithic receptors, possibly in their central sections. These data also confirm the absence of vestibular function in deaf-mute subjects who had positive Romberg tests and exhibited no nystagmus reactions in preliminary rotation tests. Orig. art. has: 2 figures and 2 tables. [JB]

SUB CODE: 06/, SUBM DATE: 26Nov64/ ORIG REF: 011/ OTH REF: 008/ ATD PRESS: 4/88

Card 2/2 FW

L 34908-65 EWG(j)/EWG(r)/EWT(1)/FS(v)-3/EWG(v)/EWG(a)/EWG(c) Pe-5 DD

ACCESSION NR: AP5007276

S/0216/65/000/002/0278/0285

AUTHOR: Markaryan, S. S.

TITLE: The effects of angular and Coriolis accelerations on some human functions

SOURCE: AN SSSR. Izvestiya. Seriya biologicheskaya, no. 2, 1965, 278-285

TOPIC TAGS: angular acceleration, Coriolis acceleration, biological effect, man, vestibular analyzer, autonomic nervous system

ABSTRACT: A study has been made of the physiological effects of Coriolis and angular accelerations on man. Fifteen healthy men aged 20—25 were exposed to 133 sessions in two experimental series. In 13 subjects the vestibular sensitivity was low, and in the rest it was average. In the first series of experiments, 6 subjects were exposed to various magnitudes of angular acceleration in a sitting position. Each subject was subjected to 8 rotations of 1.5 min each at 60, 120, 180, and 240 deg/sec² and 15, 30, 45, and 60 deg/sec². The magnitudes of positive and negative acceleration were the same. A 1 1/2-hr break took place after the first 4 runs. In the second series of tests, 9 subjects were exposed to Coriolis forces for 5 min at acceleration magnitudes of 180, 360, and 540 deg/sec. When turning, each subject would incline his head forward for 1 sec and then straighten up to his original position. This test was repeated twice after 2-min lapses. In some tests,

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L 34908-65

ACCESSION NR: AP5007276

subjects also inclined their heads toward one shoulder, facilitating a study of their subjective impressions during Coriolis forces, depending on the rate of rotation. All tests took place in a hooded chair developed by Markaryan and Shchukin (1961). A Khalina table and aeronavigation devices stood at eye level 50 cm from the subject and were illuminated by 50 lux. The chair is shown in Fig. 1 of the Enclosure. The tests indicated that as the magnitude of angular acceleration and duration of exposure increased, the duration of vestibular nystagmus and illusions of rotation in the opposite direction increased. During angular accelerations and for some time after exposure to them, the ability to distinguish objects in the chair was lowered. As the magnitude of angular acceleration increased, so did pulse and respiration rates. Repeated exposures to angular accelerations produced general fatigue, static disruption, and in subjects with average vestibular sensitivity, types of vestibular-vegetative illusions similar to seasickness. Following exposures to rotation, the pulse rate decreased, maximum arterial pressure decreased, and minimum arterial pressure increased. When head movements were conducted during rotation, there were sensations that surrounding objects had been moved to one side or the other, depending upon which side the head was inclined toward. Repeated head inclinations, together with an increased rotation rate, produced more severe impressions of this sort, and vestibular-vegetative disturbances occurred sooner. It was felt that studies of the Coriolis effect are of great significance to aviation and space medicine and to the clinic. Orig. art. has: 4 figures and 2 tables. [CD]

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L 34908-65
ACCESSION NR: AP5007276

SUBMITTED: 11Aug64

INCL: 01

SUB CODE: PH, LS

NO REF SOV: 008

OTHER: 005

ATD PRESS: 3212

Card 3/4

L 34908-65
ACCESSION NR: AP5007276

ENCLOSURE: 01

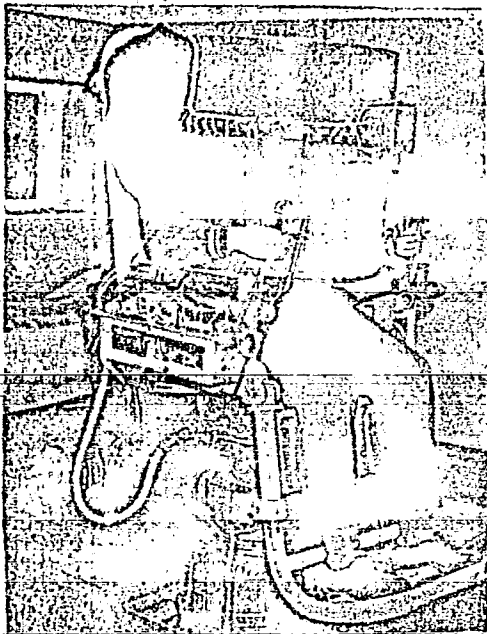


Fig. 1. Subject in the Marking
of the Chair

Card 4/4

L 14286-66 EWT(1)/ES(v)-3 SCTR DD/RD

ACC NR: AT6003870

SOURCE CODE: UR/2865/65/004/000/0361/0366

AUTHOR: Mansurov, A. R.; Markaryan, S. S.

ORG: none

2, 44
TITLE: Effect of rotation on the human organism with the trunk inclined at various angles

SOURCE: AN SSSR. Otdeleniye biologicheskikh nauk. Problemy kosmicheskoy biologii, v. 4, 1965, 361-366

TOPIC TAGS: space physiology, cardiovascular system, vestibular apparatus, biologic acceleration effect, man, physiologic parameter, vestibular effect

ABSTRACT: The physiological effects of various rotational magnitudes as a function of human sitting position were studied in 988 tests with 11 male subjects. One group was exposed to acceleration of 30, 40, 60, and 120°/sec (angular rate, 1 rev/sec). Each experiment consisted of 4 rotations for 5 min with a 10—20-min interval between them. The other group experienced 15, 30, 45, 60, 120, 180, and 240°/sec² at rates of 0.5, 1.0, 1.5, and 2.0 rev/sec; the duration of each test was 1.5 min with a 15—20 min interval between tests. The body angles are shown in Fig. 1.

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L 14286-66

ACC NR: AT6003870

Results of the experiment showed that in the majority of cases rotation increased pulse rate by 10 beats/min. During rotation at constant rates, this index returned to normal or sometimes decreased below normal. Brain bioelectricity was unaltered. At the end of the tests, the pulse rates of all subjects had decreased 3—18 beats/min. The maximum arterial pressure decreased by 9 mm Hg, and the minimum increased by 12 mm Hg.

At angles beginning with 65°, and especially at 80° and 90°, subjects experienced illusions of internal organ displacement and throat constriction. After these tests, hyperemia of the eyelid was prevalent and the eyes were bloodshot. At angles of 0—30° (1.5—2.0 rev/sec) the head and legs felt heavy and movement of extremities was restricted. Multiple rotations at 0° brought about changes in the x-ray position of thoracic organs characterized, in particular, by increased capacity of lower lung areas. This symptom disappeared after 5-7 days. Repeated rotations at 20-65° disrupted the circulatory system in the vicinity of the lungs and heart. An increase in the dimensions of the heart and heavy vasculature, observed in half the cases corresponded to disrupted heart muscle contractions. These symptoms were reversible and disappeared after 5-7 days.

Card 2/4

I 14286-66
ACC NR: A16003870

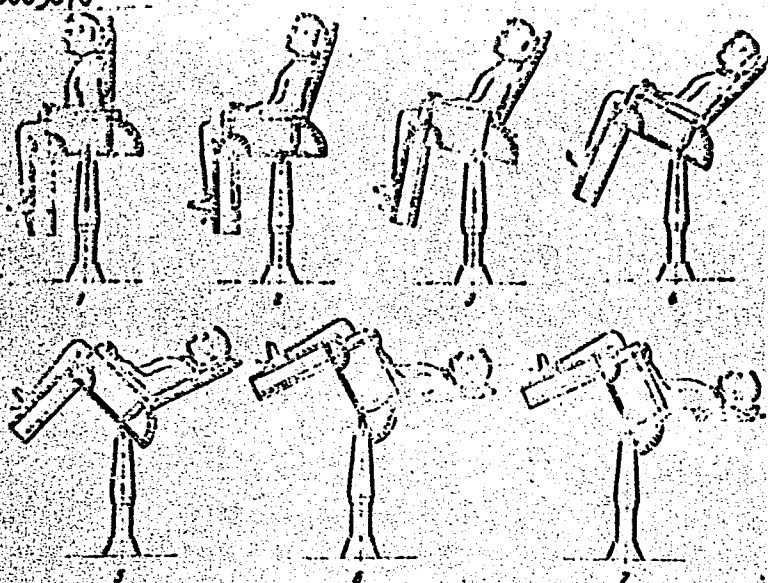


Fig. 1. Sitting position during rotation tests

1 - 0°; 2 - 20°; 3 - 30°; 4 - 45°; 5 - 65°; 6 - 80°; 7 - 90°.

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L 14286-66

ACC NR: AT6003870

A number of subjects who had low tolerance to rotation showed changes in heart muscle activity, characterized by a lack of pulsation in restricted cardiac areas when rotation had ceased. This symptom corresponded to an increase in heart dimension associated with decreased pulsation. The occurrence of so-called "silent zones" in the x-ray contour of the heart after rotation is felt to be caused by reflex vasomotor disruption of coronary circulation which would affect heart muscle. The total reaction tends to reflect excessive irritation of the vestibular apparatus due to rotation. In general, it was concluded that the observed reversible cardiovascular changes were due to vestibular lability in response to angular accelerations. Orig. art. has: 1 figure, 1 table. [ATD PRESS: 4091-F]

SUB CODE: 06 / SUBM DATE: none / ORIG REF: 009 / OTH REF: 001

80
Card 4/4

L 21542-66 EWT(1) SCTB DD

ACC NR: AP6007883

SOURCE CODE: UR/0177/66/000/002/0065/0067

AUTHOR: Markaryan, S. S. (Lieutenant colonel in medical service; Candidate of medical sciences); Vartbaronov, R. A. (Major in medical service)

ORG: none

TITLE: The use of skin thermometry to evaluate vestibular-autonomic reactions

SOURCE: Voenno-meditsinskiy zhurnal, no. 2, 1966, 65-67

TOPIC TAGS: vestibular analyzer, Coriolis acceleration, acceleration effect, autonomic nervous system

ABSTRACT: Existing methods of vestibular selection (Barani chair, Khilov swing, etc.) are inaccurate predictors of vestibular-autonomic disturbances occurring in flight. Experiments were conducted to determine whether thermal reactions to Coriolis accelerations provide a better index of vestibular disturbances. The subjects were 16 men aged 18-32, six of whom had low natural vestibular tolerance. Coriolis accelerations were created by inclining the head or trunk forward (30° and 90° respectively) 30 times per minute with eyes closed while the chair was rotating at 60° or 180°/sec. The combined effect of Coriolis accelerations (rotation rate 180°/sec) and optokinetic stimulation (17 stripes/sec) was also tested. Individual tests lasted up to 20 min, depending on the time of appearance of motion sickness symptoms. The skin temperature of forehead, wrists, and shins was recorded during and after rotation. Two control studies were conducted with minimal vestibular

Cord 1/3

L 21542-66

ACC NR: AP6007883

Table 1. Average changes of temperature of forehead skin during the cumulative effect of Coriolis accelerations of different intensity

Rotation rate of chair in /sec	Angle of inclination of head-trunk (in °)	Degree of vestibular tolerance (according to Voyachev's otolith test)	Number of subjects without manifestations of motion sickness	Instant period of motion sickness	Average initial temperature	Average difference in temperature of forehead skin (in °C)	
						During rotation	Interim after rotation
0	30	0-I	6	0	34,2	+0,8±0,2	+0,9±0,3
0	90	II-III	6	0	34,0	+0,9±0,2	+1,0±0,2
		0-I	6	0	34,7	+0,3±0,2	+0,5±0,4
		II-III	6	0	34,5	+0,4±0,3	+0,4±0,2
0	30	0-I	4	1	34,9	+0,1±0,6	0±0,8
180	30	II-III	4	4	34,9	-0,3±0,6*	-0,2±0,3*
		0-I	10	9	33,4	-0,9±0,7	-1,0±0,8
		II-III	6	6	33,7	-0,7±1,1	-0,7±1,1
180	90	0-I	6	6	34,0	-0,8±0,3	-0,8±0,4
		II-III	6	6	34,0	-0,6±0,5	-0,6±0,3
		II-III	6	6	40 sec ± 27 sec		

1. In the majority of cases the same people participated in different series of investigations.
2. The reliability of temperature changes depending on the rotation rate in all cases is more than 99%.
- * The reliability of differences in the degree of vestibular tolerance is more than 99%.

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L 21542-66

ACC NR: AP6007883

stimulation; in one variant head inclinations were performed without rotation, and in the other the subject was rotated with his head immobilized. Experimental results showed vestibular-autonomic disturbances with varying degrees of severity in most subjects exposed to Coriolis accelerations. Results of one phase of the experiment are given in Table 1. With the appearance of motion sickness, recovery of skin temperature took 10-15 min after cessation of rotation (compared with 2-3 min in the controls). It should be noted that the combined effect of Coriolis acceleration and optokinetic stimulation produced less thermal reaction than acceleration alone. The skin-thermometry method can be recommended for determining the degree of vestibular-autonomic disturbance under the accumulated influence of Coriolis accelerations. This method is distinguished by the fact that the decrease in skin temperature depends not so much on the degree of vestibular tolerance as on the appearance of a motion sickness syndrome, and the force and duration of the vestibular stimulus. Orig. art. has: 1 table. [JS]

SUB CODE: 06/ SUM DATE: none/ ATD PRESS: 4219

Card 3/3 814

L 39790-66 EWT(1) SGTB DD/GD-2

ACC NR: AP6011412

SOURCE CODE: UR/0216/66/090/002/0221/0229

AUTHOR: Markaryan, S. S.; Vartbaronov, R. A.

ORG: none

TITLE: Comparative characteristics of autonomic reactions to some cumulative methods of stimulating the vestibular analyzer

SOURCE: AN SSSR. Izvestiya. Seriya biologicheskaya, no. 2, 1966, 221-229

TOPIC TAGS: vestibular analyzer, vestibular stimulus,
human physiology, vestibular training

ABSTRACT: The author conducted three series of detailed tests using the Markaryan-Shchukin vestibulometer (1961). Table 1 shows the various test parameters. The experiments were conducted on 26 subjects aged 20—33, 7 of whom had second- and third-degree lowered vestibular stability. The physical parameters of the stimuli were measured by recording the angular velocity of the vestibulometer and the rate of head motion in two planes on an oscillograph using accelerometric sensors. To

Card 1/6

UDC: 611.85:629.195

ACC NR: AP6011412

Table 1.

Basic parameters of vestibular stimulation as a function of the test series:

I	2	3	4*	5	6	7	8	9	10	11
I	1	0	30	30	0	0	—	—	0	13
	2	0	90	15	0	0	—	—	0	11
	3	60	30	30	0,008	0	—	—	0,028	11
	4	180	30	30	0,07	0	—	—	0,07	15
	5	180	30	30	0,03	0	—	—	0,07	8
	6	180	30	0	0,07	0	—	—	0,07	5
	7	180	90	15	0,50	0	—	—	0,35	11
II	1	0	0	—	0,2—0,3	0	16	—	0	71
	2	10—180	0	—	0	$\pm 12,9$	2,5	—	0	12
	3	10—180	0	—	0,2—0,3	$\pm 12,9$	16 и 2,5	—	0	10
III	1	130	0	—	0	0	—	11	0	9
	2	10—180	0	—	0	$\pm 12,9$	2,5	1—17	0	12
	3	180	30	30	0,07	0	—	17	0,07	11

I - Series no.; 2 - subseries no.; 3 - head; 4 - inclination angle in degrees*; 5 - frequency of head inclinations, min; 6 - maximum linear G's; 7 - angular acceleration, degrees/sec; 8 - cycles/min; 9 - stripe flicker frequency during optokinetic stimulation in sec; 10 - maximum value of Coriolis acceleration, G; 11 - no. of tests

*Head always inclined forward except in series I, subseries 5

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I 39798-66

ACC NR: AP6011412

determine physiological responses, EKG's, SCG's, pneumograms, brachial arterial pressure, capillaroscopy, blood flow rate (determined oxyhemometrically), and skin temperature of the forehead, hands, and legs were recorded along with visual observations and interrogations. Some results of the tests are shown in Table 2. The experiments showed that the character and degree of changes in autonomic reaction indexes in response to the cumulative action of adequate stimuli correspond to the severity of motion sickness. The best indexes of motion sickness are change in complexion, increased pulse rate, decreased erythrocyte movement, and reduction of the heat circulation index in the region of the head. Of the various methods

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39795-66

ACC NR:

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1	2	3	4			8	
			5	6	7	9	10
I	1,2	I	10	0	0	>20	10
		II	6	0	0	>20	6
	3	I	5	1	0	13	1
						>20	5
	4,5,7	II	0	1	5	9±4,5	0
		I	0	1	10	4,4±2,2	20
	1	II	0	0	14	0,65±0,4***	14
		I	3	0	0	>20	3
		II	4	0	0	>20	4
II		I	7	0	0	>20	7
	2	II	3	2	0	12	2
	3	I	5	0	0	>20	5
		II	4	1	0	13	1
						>20	4
	1	I	4	0	0	>20	4
		II	3	1	1	9	2
						>20	3
	2	I	3	2	3	10,6±3,3	6
						>20	2
III		II	0	1	3	5,5±4,4**	4
	3	I	0	0	0	3,5±1,4	6
		II	0	0	5	1,3±1,1*	5

Table 2. Dependence of some motion sickness parameters on the character and degree of vestibular stimulus

1 - Series no.; 2 - subseries no.;
3 - degree of vestibular stability;
4 - severity of motion sickness;
5 - lacking; 6 - mild; 7 - severe;
8 - latent period; 9 - effect duration, min; 10 - no. of cases;

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L 29/7/85-00

ACC NR: AP6011412

11		1		
12	13	15	16	17
>20	10	—	0	—
>20	6	—	0	—
>20	0	5	1	1
10±5,3	6	5—12	6	1
0,4±4,2	19	15—30	19	1
>20	1			
1,7±0,6***	14	25—3 часа	14	0
>20	3	—	0	—
>20	4	—	0	—
>20	7	—	0	—
>20	5	—	0	2
>20	5	—	0	—
>20	5	—	0	0
>20	4	—	0	—
12	1	2	1	1
>20	4			
15±3	4	5—10	3	2
>20	4			
8,2±3**	3	10—25	3	1
>20	1			
0,2±3	6	10—25	6	0
1,8±1,6*	5	30—1 час	5	0

Table 2. continued

11 - tolerance time; 12 - duration, min; 13 - no. of cases; 14 - after-effects; 15 - duration, min; 16 - cases; 17 - sign of adaptation.

Explanation: II-group with lowered vestibular stability. Significance of differences between I and II groups: error less than 0.001***; 0.01**; 0.05*.

Card 5/6

L 38798-46

ACC NR: AP6011412

tested, the accumulation of Coriolis accelerations is recommended for assessing individual vestibulo-autonomic stability in humans. Orig. art. has: 3 tables. [CD]

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4231

Card 6/6 MLP

L 29382-66 EWT(1) SCTB DD

ACC NR: AP6017528

SOURCE CODE: UR/0177/66/000/005/0078/0079

AUTHOR: Markaryan, S. S. (Lieutenant colonel in medical corps; Candidate of medical sciences); Sidel'nikov, I. A. (Major in medical corps)

ORG: none

TITLE: Portable rotating chair with electric drive

SOURCE: Voyenno-meditsinskiy zhurnal, no. 5, 1966, 78-79

TOPIC TAGS: biologic acceleration effect, flight physiology, space physiology,
Coriolis force,

ABSTRACT: An electrically driven rotating chair for vestibular testing and training² is described. The chair drive consists of currently available equipment adapted to the purpose: an aircraft radar antenna servodrive powered by a selenium rectifier, with a rheostat speed control and electrical reversing switch. The drive can rotate a subject weighing up to 120 kg at speeds up to 180°/sec. The chair can be tilted at various angles to create Coriolis accelerations.² The drive box with rotating platform (to which a conventional Barany chair is anchored) measures 500 x 500 x 140 mm and weighs 20 kg. The advantages of the electrically powered chair over the hand-powered models ordinarily used are enumerated: more evenly controlled speed of

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L 29382-66

ACC NR: AP6017528

rotation, more accurate administration of set amounts of vestibular stimulation, and less fatigue for the physician conducting the test or training. Orig. art. has: 2 figures. [DP]

SUB CODE: 06/ SUBM DATE: none/ ATD PRESS: 5608

Card 2/2 CC

MARKARYAN, S.S.

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Ja-F '66. (MIRA 19:1)

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